Chapter 3: Reaching Key Populations

SUMMARY

Reaching key populations—people who are vulnerable, marginalized, underserved or at-risk of TB infection and illness—will be essential for ending TB. Beyond epidemiology, it is imperative from an equity and human rights perspective that we strive to protect people in key populations; provide them with care, understand the social, political, legal and economic barriers they face in accessing the TB prevention, diagnosis, treatment, care and support services they need, and to involve them as priority stakeholders and equal partners in the fight against the disease. To reach TB key populations, they must be meaningfully engaged and empowered to participate in TB governance and decision-making. Facilitating the meaningful participation of the representatives of key populations, on behalf of the constituencies they represent, in all TB policy, programme and governance discussions and decisions is vital if TB programmes are to understand the lived experience of TB. Investing in building the capacity and coordination of TB key populations in advocacy, treatment literacy, monitoring and evaluation, programme design, procurement and human rights—which together can contribute to creating a care-enabling environment for those most vulnerable—is a significant aspect of reaching these populations and must receive increased priority. These actions will help to find and treat the 3.3 million missing people with tuberculosis who go undiagnosed or unreported to public health systems each year in a way that is not only more effective, but is human rights-based, gender sensitive and people centered.

PRIORITY ACTIONS

Governments

- Set an operational target of reaching at least 90% of people in key populations—through improved access to services, systematic screening where required, and new active case-finding approaches—and providing all people in need with effective and affordable treatment.

- Fulfill UNHLM commitments to remove discriminatory laws, policies and programmes against people with TB, promote and support an end to stigma and all forms of discrimination, and enact policies and practices that improve outreach, education and care. Governments can use the stigma assessment tools developed by the Stop TB Partnership and other partners.

- Extend support for key populations, improve quality of information, and ensure TB care and support is provided in safe environments free from stigma and discrimination.

- Integrate UNHLM on TB commitments with regard to key populations into national TB strategies and guidelines; develop and implement multisectoral plans for outreach and service provision for specific key populations.

- Report on progress in TB with data disaggregated by key population.
Implement gender-sensitive policies and programming across all aspects of TB programmes, with particular consideration to both disease prevalence and access to services.

Facilitate the involvement of TB survivors and key populations in all levels of policymaking and programmatic design in order to ensure TB services are people-centered and meet the expressed needs of affected communities and invest in networks and organizations of TB survivors to build the required capacity to effectively engage in TB governance.

Technical partners
- Provide countries with frameworks for prioritization, action and monitoring progress in improving access to TB services for key population groups and also support the meaningful engagement of these populations, through investment and capacity building monitoring and advocacy, particularly in terms of TB and treatment literacy, monitoring and evaluation and human rights.

Mining companies
- Implement strong infection-control policies and provide workplace health and safety programs that provide routine TB screening, prevention and a system for ensuring mine workers with TB, and their families, receive appropriate quality care and support services.

Prisons and Detention Centers
- Provide routine TB screening, diagnosis and access to appropriate quality TB care of prisoners, other people in detention and staff working in those facilities.
- Ensure continuity of care for incarcerated persons released back into the general population during the course of receiving TB treatment or preventive therapy.
- Reduce overcrowding, malnutrition, and address the limited ventilation in prisons and detention facilities.

Advocates
- Frame the need to reach people key populations TB as an equity and human rights imperative.
- Support the growth and cultivation of global, regional and national networks of TB survivors and members of affected communities, and partner with them in advocacy activities at every opportunity.
- Prioritise the investment in networks of TB survivors and affected communities, to effectively contribute in a coordinated as decision makers, service providers, monitors of programmes and advocates.
Reaching key populations is an equity and human rights imperative.

It is unacceptable that nearly half of the world’s people cannot afford or access quality health care, live in unhealthy environments, or are malnourished. We have a collective responsibility to support key populations who face higher risks associated with TB, to provide them with a cure, and to empower them to be both leaders and equal partners in the fight against the disease. Reaching key populations is critical to fulfilling the promise of the SDGs, which is to leave no one behind. The UNHLM political declaration on TB further commits UN Member States to leave no one behind in the effort to end TB. But as the UN Committee for Development Policy has acknowledged, leaving no one behind is “seldom disputed in principle, but the complexity of its practical implementation is often insufficiently acknowledged.”\(^1\) In large part, this reality is why taking concrete actions to reach key populations who are at higher risk of TB is so essential.

Key populations are those who experience increased impact from TB and decreased access to services. Stigma, discrimination, violence and harassment, restrictive laws and policies, and criminalization of behaviors or practices place key populations at greater risk of TB and make it more difficult to access services.\(^2\) To reach key populations, they must be empowered as decision-makers in the TB response. Acknowledging their unique role in having lived experience of TB, they can help inform the removal of social, political, legal, gender, economic or cultural barriers to access, and help to extend support for patients, increase quality of information, and ensure TB care is provided in safe environments free from stigma and discrimination. As discussed in Chapter 4, key population groups and affected communities themselves can take leadership roles in providing many of these services. For this to happen, the right policy and legislative frameworks must be in place, backed by adequate funding.

The UN political declaration on TB aligns with numerous international legal frameworks in committing to protect and promote the right to the enjoyment of the highest attainable standard of physical and mental health. Specifically, governments committed to removing discriminatory laws, policies and programmes against people with TB, to promote and support an end to stigma and all forms of discrimination, and to enact policies and practices that improve outreach, education and care.

These actions are critical to fulfilling another commitment within the declaration: finding the 3.3 million missing people with tuberculosis, who go undiagnosed or unreported to public health systems each year.\(^3\) This is the aim of FIND. TREAT. ALL. #ENDTB, a joint initiative by WHO, Stop TB Partnership and The Global Fund to engage TB affected communities, civil society and development financing partners in enabling access to care for the millions who face barriers preventing them from accessing quality-assured TB care and support each year.\(^4\)

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\(^1\) Leaving no one behind. UN Committee for Development Policy. New York: United Nations. 2018. Online: https://sustainabledevelopment.un.org/content/documents/2754713_July_PM_2_Leaving_no_one_behind_Summary_from_UN_Committee_for_Development_Policy.pdf


BOX 3.1 Key Issues in TB and Human Rights

A paradigm shift toward a human rights-based approach to TB

The UNHLM Political Declaration calls for transforming the TB response to be rights-based. Promotion and protection of human rights of people affected by TB is a legal, ethical and more imperative, as well as of crucial importance for the effectiveness of the response to the epidemic and the relief of suffering among affected individuals and communities. A human rights-based response to TB is critical as it can contribute to overcoming barriers to accessing TB education, prevention, diagnosis, treatment, care and support services. There are a range of human rights considerations relevant for TB interventions. These can include issues of accessing safe, quality, affordable drugs and diagnostic; stigma and discrimination; privacy; deprivation of liberty; participation of TB survivors; dignity; gender equity; assembly; accessing scientific progress; and, realizing the highest attainable standard of health. These are the rights of all people—but particular attention needs to be given to the realization of rights of those who are most vulnerable and marginalized—including urban and rural poor, PLHIV, people who use drugs, children, migrants, refugees, indigenous persons, miners and people deprived of liberty. Through human rights-based, gender sensitive and people centered TB interventions, social, political, cultural, legal and economic barriers to accessing TB services can be overcome and the effectiveness of TB interventions can be significantly enhanced.5

Legal frameworks and precedents for ensuring the rights of people with TB

As laid out in the Declaration of the Rights of People Affected by Tuberculosis, people with TB have a right to life; a right to dignity; a right to the highest attainable standard of physical and mental health; a right to freedom from torture and other cruel, inhuman or degrading treatment; and other rights. Under international and regional human rights law, states have legal obligations to respect, protect and fulfil those rights. Non-state actors also have responsibilities to respect the human rights of people affected by TB.6 There are legal precedents that have compelled states to provide TB care and support to people affected by TB. Judgments by the European Court of Human Rights, for example, have required states to provide TB care for children in state custody. And in 2007, Argentina’s Supreme Court ruled that the state was obligated, under human rights treaties and national and provincial constitutions, to provide TB care for members of the Toba indigenous community.7

Human rights and TB prevention

The UN political declaration also committed to prevent TB by providing 30 million people with TB preventive therapy, including 4 million children under the age of 5 years, 20 million other household contacts of people affected by TB, and 6 million people living with HIV.

Reaching 30 million people with preventive therapy will require a paradigm shift in how health systems view the rights of people living with TB infection. Health systems must recognize and act to honor people’s right to know their TB status, i.e., whether they are living with TB infection, as a foundation for supporting activities that proactively reach people at risk of TB with access to evaluation and quality-assured preventive therapy. In Uganda, for example, in a piloted approach called DETECT Child TB, child household contacts of adults diagnosed with TB were routinely evaluated for TB, with decentralized services provided by health workers within the community. Using this approach, 74 percent of children under five years received TB preventive therapy—compared with 27 percent of children under five years who received TB preventive therapy worldwide in 2017.8,9

The Global Plan recommends that countries set a separate operational target of reaching at least 90% of those they would define as key populations—through improving access to services, systematic screening10 where required, and active, new, and innovative case-finding methods—and providing all people who require it with effective and affordable treatment.

Countries are encouraged to report on progress in TB with data that are disaggregated by key population. Technical partners are encouraged to provide countries with frameworks for prioritization, action and monitoring progress in improving access to TB services for key population groups.

Examples of successful interventions that have been implemented to reach key populations can be found in a compendium of case studies from the Stop TB Partnership’s TB REACH programme.11 TB REACH has also included strong examples of support for key populations within field guides made available through the Global Fund Strategic Initiative To Find the Missing People with TB.12

**TB and gender**

Gender disparities in TB present huge challenges in providing access to services. Worldwide, men are much likelier than women to contract and die from TB, with approximately 6 million adult men contracting TB and 840 000 dying from the disease in 2017, compared with 3.2 million adult women who suffered nearly half a million deaths.13 At the same time, TB has a grave impact on women during reproduction and in pregnancy—and TB is still the leading infectious killer among females globally.

Improving access to TB services for all demands a gender-sensitive approach. People of different genders are affected differently by TB, are subject to varying levels of stigma, and

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10 For guidance, see WHO’s guidelines on systematic screening for active tuberculosis at: [http://www.who.int/tb/tbscreening/en/](http://www.who.int/tb/tbscreening/en/)
12 Stop TB Partnership. The Strategic Initiative To Find the Missing People with TB. 2018. [https://stoptb-strategicinitiative.org/](https://stoptb-strategicinitiative.org/)
face different barriers to access. Quality gender-sensitive and gender-responsive programming should eliminate different socio-economic and stigma-related barriers. In some situations, legal support is necessary to ensure that people from key populations can access care and prevention and remain free from unjust policies and practices like involuntary isolation and discrimination.14

**TB stigma**

Eradicating stigma is essential to reaching the millions of missing people who develop TB and go without care and support, and this effort goes hand-in-hand with more targeted efforts to reach key populations with services. People with TB report facing stigma even from their own family members, friends and colleagues, often leading them to take measures to hide their diagnosis from others. People with TB can also experience self-stigma, where a person internalizes attitudes of shame, disgust or even guilt associated with TB. The stigma associated with TB creates a profound social and cultural barrier that makes it more difficult for people with TB both to openly seek the care and support they need and to complete TB treatment.15 For these reasons, it is important that affected communities lead the conversation on TB stigma and spearhead efforts to educate the public about what TB is actually like for those who experience it. This act of owning one’s own story and sharing it with others can create understanding that reduces TB stigma.

To assist governments in taking action to dispel TB stigma, The Stop TB Partnership, with support from USAID and in collaboration with the Global and Regional Community Networks, health care workers from the Global Coalition of TB Activists, human rights experts from Northwestern Pritzker School of Law and technical partners such as WHO and KNCV, have developed TB stigma assessment tools for countries to assess the types, levels, causes and impact of TB stigma and develop recommendations to address them.16

**Key Population Groups**

The UN political declaration on TB acknowledges specific key populations who are vulnerable to TB include people who are vulnerable or in vulnerable situations, including: women and children, indigenous peoples, health-care workers, migrants, refugees, prisoners, miners and others exposed to silica, the urban and rural poor, underserved populations, undernourished people, individuals who face food insecurity, ethnic minorities, people and communities at risk of exposure to bovine tuberculosis, people living with diabetes, people with mental and physical disabilities, people with alcohol use disorders and people who use tobacco, while recognizing the higher prevalence of tuberculosis among men. People within key population groups are at greater risk of TB because of increased exposure, because of limited access to quality-assured TB services, or because of biological or behavioral factors (Table 3.1). People within one of categories can also be part of the other groups. A mine worker, for example, might live in a community with little access to health care and might be


living with HIV. He might also smoke and/or have diabetes. He might also pass TB to his children.

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**TABLE 3.1. KEY POPULATIONS FOR TB**

<table>
<thead>
<tr>
<th>People who have INCREASED EXPOSURE to TB due to where they live or work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prisoners, sex workers, miners, hospital visitors, health care workers and community health workers</td>
</tr>
</tbody>
</table>

**PEOPLE WHO:**
- live in urban slums
- live in poorly ventilated or dusty conditions
- are contacts of individuals with TB, including children
- work in environments that are overcrowded
- work in hospitals or are health care professionals
- are in contact with or live with livestock

<table>
<thead>
<tr>
<th>People who have LIMITED ACCESS TO QUALITY TB SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migrant workers, women in settings with gender disparity, children, refugees or internally displaced people, illegal miners, and undocumented migrants</td>
</tr>
</tbody>
</table>

**PEOPLE WHO:**
- are from tribal populations or indigenous groups
- are homeless
- live in hard-to-reach areas
- live in homes for the elderly
- have mental or physical disabilities
- face legal barriers to access care
- are lesbian, gay, bisexual or transgender

<table>
<thead>
<tr>
<th>People at INCREASED RISK of TB because of biological or behavioural factors that compromise immune function</th>
</tr>
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<tbody>
<tr>
<td>-----------------------------------------------------------------------------------------------------------</td>
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**PEOPLE WHO:**
- live with HIV
- have diabetes or silicosis
- undergo immunosuppressive therapy
- are undernourished
- use tobacco
- suffer from alcohol-use disorders
- inject drugs
Children and adolescents

An estimated one million children under 15 year of age developed TB in 2017, and 233 000 died of the disease.\textsuperscript{17} Approximately 80 percent of these deaths were among children under 5 years of age. The actual burden of TB among children is likely higher, given the challenges of diagnosing childhood TB. Children with TB often come from families that are poor, have not received information or education about the disease, and live in communities with limited access to health services. Even if children have access to health services, the health services or facilities often lack the tools and expertise to diagnose TB in children. Child contacts of adults with TB should be routine screened and provided TB preventive therapy or treatment as appropriate—but here, too, there are huge gaps in service delivery. In 2017, over 75 percent of children eligible for TB preventive therapy worldwide did not receive it.\textsuperscript{18}

Children from impoverished communities also face a much higher risk of malnutrition and wasting, both in utero when their mothers are malnourished and after birth.\textsuperscript{19} Infants and children under 5 years of age are the most challenging to diagnose and are the most likely to die from TB. In fact, a greater proportion of TB in children is missed when compared to adults.

For all of these reasons, the UN political declaration has a target of reaching 3.5 million children with TB treatment and 115 000 children with MDR-TB treatment between 2018-2022. There are currently no global data, nor national-level data in many countries, on the numbers of children accessing MDR-TB treatment.

Childhood TB must be a cross-cutting national health priority and not the sole responsibility of national TB programmes. It should be addressed in collaboration with child health services, as care for sick children is primarily sought through pediatric services, and should be part of overall efforts to scale up maternal and child health services. Health care workers and pediatricians in both public and private sectors should report all children diagnosed with TB to national TB programmes. In turn, national TB programmes must report treatment outcomes for these children.

Adolescents (10-19 years) also face particular challenges. Adolescents with TB often present with infectious disease typically seen in adults, which leads to a high risk of transmission in schools and other places where adolescents gather. Fears of stigma and challenges associated with peer-pressure, the risk of HIV, and behavioral risks arising from the use of alcohol and tobacco also present risks for adolescents. Adolescents need friendly health services, relevant psychosocial support and treatment and care that serves minimal disruption to their education. To

better understand how the TB epidemic impacts adolescents ages 10-14 and 15-19, countries should disaggregate TB data into these different age groups.\(^{20}\)

Tackling TB in children and adolescents will require a focus on mothers, too. Women living with HIV – who are more likely to have TB – need assistance and care from the health system in order to reduce the possibility of passing infections to their children.\(^{21}\) Thus, TB should be integrated at the primary-care level in maternal and child health programmes through antenatal and postnatal clinics.

The Roadmap Towards Ending TB in Children and Adolescents (see Fig. 3.1) sets up the goal of reaching zero TB deaths among children worldwide. It describes key actions and an urgent need for enhanced investments in order to ensure that the goal is met.\(^{22}\)

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**BOX 3.2 GDF’s Launchpad: DR-TB Pediatric initiative**

To speed up the introduction of child-friendly formulations for treating drug-resistant tuberculosis (DR-TB), as one of key commitments from UNHLM TB, the Stop TB Partnership’s Global Drug Facility (GDF) has taken a multi-pronged approach to address barriers to getting diagnosed and treated children with TB. GDF, with support from US and Japan, has started providing grants to 56 countries, covering the costs for a first order of these products. GDF has consolidated the demand to improve the supply of these products, including negotiating an 18% price reduction and minimizing barriers to supply. Additionally, GDF has provided funding to the Sentinel Project on Paediatric DR-TB, a network of clinicians, caregivers and advocates, which identified countries that could rapidly implement these new formulations. Sentinel is providing implementation guidance and support to these programmes.

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**FIGURE 3.1 ROADMAP: TOWARDS ENDING TB IN CHILDREN AND ADOLESCENTS**

[TK Insert Page 17 figure:](https://apps.who.int/iris/bitstream/handle/10665/274374/9789241514668-eng.pdf]


**Health Workers**

The world has an estimated 59 million health workers.\textsuperscript{23} TB remains a significant occupational risk for health workers in low-income and lower middle-income countries, and in some institutions in high-income countries. The risk is particularly high in situations where there is increased exposure to TB and inadequate infection-control measures.\textsuperscript{24}

Health care workers are at risk of acquiring TB from patients that they care for (in the case of nurses and physicians) or from exposure to infected specimens (in the case of laboratory


workers). Health care workers in primary health care facilities and community health workers also have an increased risk of getting TB.\textsuperscript{25} Health care workers who are in contact with people having TB or clinical material such as sputum or body fluids containing \textit{M. tuberculosis} need to be offered TB testing and, if necessary, preventive therapy. Appropriate infection-control methods need to be more widely applied.

**Mine workers**

Mining is a major driver of TB in countries in southern Africa. The working environment in underground mines is extremely favourable to the spread of TB. Risk factors include high prevalence of silicosis (a severe pulmonary disease caused by exposure to silica dust), high temperatures and humidity in mine shafts, crowded working and living conditions, high rates of HIV infection, and tobacco and alcohol use.\textsuperscript{26} Mine workers in southern and central Africa are often migrants, who face unique complications when it comes to accessing health care. That migrants make up a significant portion of the labour forces of mining companies, it also means that when mine workers are sick with TB and without access to quality, continual care, TB spreads to workers’ home communities in other parts of the country or across national borders. The world’s ten largest mining companies alone employed nearly 1 million people in 2019\textsuperscript{27}—meaning that while mining practices play a significant role in the spread of TB internationally, with strong workforce policies and practices the industry could make a positive contribution toward ending TB. National TB strategies must directly address the role of mining activities in the epidemic, as well as the responsibility of mining companies to ensure safe and healthy work environments.\textsuperscript{28} South Africa has taken the lead by introducing mandatory TB screening for mine workers and, together with nine other southern African nations, is currently implementing a Global Fund Regional Grant for addressing TB in miners.\textsuperscript{29} Fifteen southern African countries have pledged to improve treatment and care for current and former mine workers with TB and their families.\textsuperscript{30} Other methods to tackle TB among mine workers\textsuperscript{31} should include reducing silica dust, providing better housing, improving cross-border care, tracing contacts, and screening for HIV.

**Prisoners**


\textsuperscript{27} Leading mining companies worldwide based on number of employees in 2019. Statista; 2019 (https://www.statista.com/statistics/726584/largest-mining-companies-worldwide-by-employment/)


\textsuperscript{29} http://www.stoptb.org/news/stories/2016/ns16_003.asp


More than 11 million people worldwide are held in penal institutions. The conditions in many prisons fuel the spread of TB. In sub-Saharan Africa, for example, some prisons have rates of TB that are up to 1,000 times higher than in the general population. In Brazil, a population-based study showed that over half of TB strains circulating in the population could be traced back to prisons. Prisons are also a breeding ground for drug-resistant TB, as incoming and outgoing prisoners are unlikely to complete a full treatment course.

Addressing TB in prisons will require significant collaboration among the health and judicial sectors and the research community for mapping the scale of drug resistance within prisons and devising innovative ways to prevent transmission.

Linking the health care provided inside and outside prisons is vital to ensuring continuous TB care.

**People affected by zoonotic TB**

Zoonotic TB in humans, caused by *Mycobacterium bovis* (the bacteria that causes bovine TB), is mostly acquired from domestic animals and their products. The general public that consumes unpasteurized milk or untreated animal products from infected animals, people living in rural communities in which bovine TB is endemic, cattle herders, dairy workers, and workers who come in contact with infected animals or animal products are all at a higher risk of contracting zoonotic TB.

An estimated 147 000 people developed zoonotic TB in 2016, and 12 500 died due to the disease. The true scale of how many people are affected by zoonotic TB is unknown (due to the lack of adequate diagnostic tests for *M. bovis*) and its measurement complicated by a lack of routine surveillance. This is especially concerning in developing regions in which bovine TB is endemic and sociocultural practices increase the risk of transmission of *M. bovis* to humans.

As articulated in WHO’s Roadmap for Zoonotic Tuberculosis, efforts to prevent and care for people with zoonotic TB must be cross-sectoral and multidisciplinary, including both human health and veterinary sectors in responding to the disease within animal populations, developing diagnostic tools for diagnosing *M. bovis*, strengthening surveillance systems and data quality, and assessing economic impact.

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Migrants

Migrants are an increasing share of the world’s population—258 million in 2017 up from 220 million in 2010. Migrants are particularly vulnerable to TB. These populations often have poor access to health services, possibly because they are living in an area illegally, because of differences in language or ethnicity and/or because of a lack of awareness of entitlement to health services. Undocumented migrants face particular difficulties in accessing care. Even when migrants can access treatment, the need to move for employment or the threat of forced displacement often results in disrupted TB treatment, increasing the likelihood that drug resistance will emerge.

From a human-rights perspective, policies should allow people to access TB diagnosis and treatment regardless of immigration status. Similarly, immigration and labour policies should ensure that a person is not excluded from consideration for recruitment or retention based on his or her TB status.

Health care workers must be sensitized to migrants’ needs, especially the potential for TB and HIV coinfection and drug-resistant TB. Continuity of care is particularly important in migrant populations, and the development of cross-border referral systems with contact tracing and information sharing will be important to harmonize treatment protocols across borders along migration corridors. This will require not only collaboration between health actors, but also collaboration between government ministries on migration policy.

People who inject drugs

Drug use has been linked to a higher incidence of both latent TB and active TB disease. The increased risk of infection is due in part to the physiological effects of drug use, especially opiates, leading to compromised immunity. People who use drugs are at risk for a variety of environmental and behavioural factors that tend to coexist with drug use, such as homelessness, tobacco and alcohol use, imprisonment, and risk of HIV and hepatitis C from infected needles.

The effects of drug use can also mean that people do not access health services at critical junctures, such as for TB diagnosis and treatment immediately after HIV diagnosis. Even when people who use drugs do have access to TB care, they may have difficulty complying with a complicated or lengthy TB drug regimen. Opiates may suppress telltale TB symptoms such as persistent cough.

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Integrating TB treatment with drug addiction therapy can help reach the most vulnerable, so long as TB treatment continues after drug rehabilitation. Psychosocial support and day hospitals could greatly increase the rate of treatment adherence. Because close contacts are at higher risk, TB infection can often spread among groups of people using drugs together. Therefore, interventions targeted at these populations must include TB preventive therapy.

The elderly

The elderly are the largest group of people living TB infection, particularly in developed countries. Those 65 years and older are more vulnerable to TB, partly because immunity diminishes with age. Studies have found a higher frequency of underlying illnesses, more adverse reactions to drugs, and higher mortality in elderly TB patients.

Clinical features may be atypical, and older adults with pulmonary TB are more likely to have non-specific symptoms. Special attention is also needed because treatment outcomes are usually poor in older people with TB. Diagnosis is difficult and TB is frequently overlooked, often detected only at autopsy.

People living with HIV/AIDS

TB is the most common cause of death in people with HIV/AIDS. High rates of TB and HIV coinfection are a major challenge to driving down TB incidence in many countries. According to WHO’s most recent data, an estimated 880,000 people worldwide living with HIV became sick with TB in 2017. Among people with latent TB infection, people living with HIV are up to 27 times more likely to develop TB disease. Like people with TB, people living with HIV are often subject to stigma and discrimination, which can prevent them from accessing services.

TB and HIV coinfection is particularly acute in Africa, where 84 percent of all HIV-associated TB deaths occurred in 2017. There is also an urgent need to tackle both diseases in an integrated manner in countries outside of Africa. Data show that eastern Europe is seeing rising rates of both HIV prevalence and drug-resistant TB.

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The UN political declaration includes a target for providing six million people living with HIV/AIDS with preventive TB treatment by 2022. The Global Plan echoes this target and calls for countries to find at least 90% of all people with TB in the population that require treatment (including those living with HIV) and place them on appropriate therapy (including TB treatment and preventive therapy for people living with HIV).

Reaching these targets will require an accelerated integration of TB and HIV services, strong leadership and political commitment to carry out the interventions recommended by WHO and UNAIDS for jointly addressing HIV and TB.\(^{53}\)

**People living with diabetes**

Experts estimate 15.3% prevalence of diabetes among people with active TB worldwide. WHO found diabetes to be an underlying factor for 790 000 people who developed TB in 2017.\(^{54}\) By weakening the immune system, diabetes raises the risk of developing TB by two to three times.\(^{55}\) The association between these diseases is of great concern, since diabetes rates are rising sharply in many low- and middle-income countries with a high TB burden.

There are a number of ways to jointly tackle TB and diabetes. In January 2019, The Union published a new technical guide for the co-management of diabetes mellitus-tuberculosis, developed in partnership with the World Diabetes Foundation.\(^{56}\) It provides essential information for frontline health professionals for the management and care of people with both diabetes mellitus and tuberculosis.

People diagnosed with diabetes should be considered for systematic screening in high TB-burden settings.\(^{57}\) People with TB diagnosed with diabetes could be managed under the TB programme in order to ensure coherent disease management. They could then be referred to diabetes programmes after completing their treatment for TB.\(^{58}\)

Community health workers whose role is to reach out to TB patients can be trained in blood glucose testing to ensure dual care. Information on TB should also be provided to diabetes treatment centres so that health care workers are able to identify when to refer people for TB treatment.

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investigation. Procurement and delivery systems used for TB medicines could be used for insulin, the supply of which can be unreliable in low-and middle-income countries.

There are opportunities for the prevention of both diseases, since levels of hyperglycemia associated with pre-diabetes appear to correlate with a higher risk for TB. Efforts to integrate diabetes and TB care should not remain separate from those to address HIV and TB jointly. All the risk factors for TB should be approached holistically in order to maximize resources.

**People who use smoke tobacco and/or are exposed to indoor air pollution**

Tobacco smoking (and passive smoking) and indoor air pollution from burning biomass fuels in poorly ventilated kitchens and homes are major risk factors for TB. An estimated 830,000 of people diagnosed with TB worldwide in 2017 were linked to tobacco smoking. This is especially concerning, since smoking and burning fuels indoors are highly prevalent practices in countries where TB is common. These practices increase the risks of becoming infected with TB, developing active TB disease, experiencing poor treatment outcomes, and relapsing.

Reducing the number of people who smoke and reducing indoor air pollution are key interventions for ending TB. Because tobacco smoking is such a high risk factor for TB, smoking cessation support could form part of TB-related counselling and care on initial diagnosis.

**People affected by malnutrition**

In 2017 an estimated 1.9 million people developed TB where malnutrition was the attributed underlying cause. Malnutrition and TB are strongly linked, with undernutrition reducing immune defenses against TB and encouraging the transition from latent infection to active disease. TB can also impair the body’s ability to absorb nutrients and micronutrients, which in turn leads to malnutrition and wasting.

In March, 2018, India’s Prime Minister Narendra Modi announced that his country would provide people living with TB with direct cash transfers of USD 100 million through 2025 to ensure adequate nutritional support. This inspiring commitment should be matched by other countries. Many of the people who are already at high risk for TB infection, such as impoverished people living in crowded, unsanitary housing, are also likely to be undernourished. The association between undernutrition and TB is so strong that people who are overweight have even lower incidence of TB than people of a healthy weight (although obesity increases risk factors for diabetes and other metabolic diseases).

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64 https://www.narendramodi.in/text-of-pm-s-address-at-the-inaugural-session-of-end-tb-summit-539297
Ensuring food security for the general population is an important component of preventing TB. There is also some evidence that tailored nutritional support during TB care can help patients adhere to treatment, especially those with drug-resistant TB. WHO has provided relevant guidance. To make nutritional support a reality, interdepartmental efforts from other ministries, including those responsible for social welfare, finance, food and agriculture, will be vital.

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